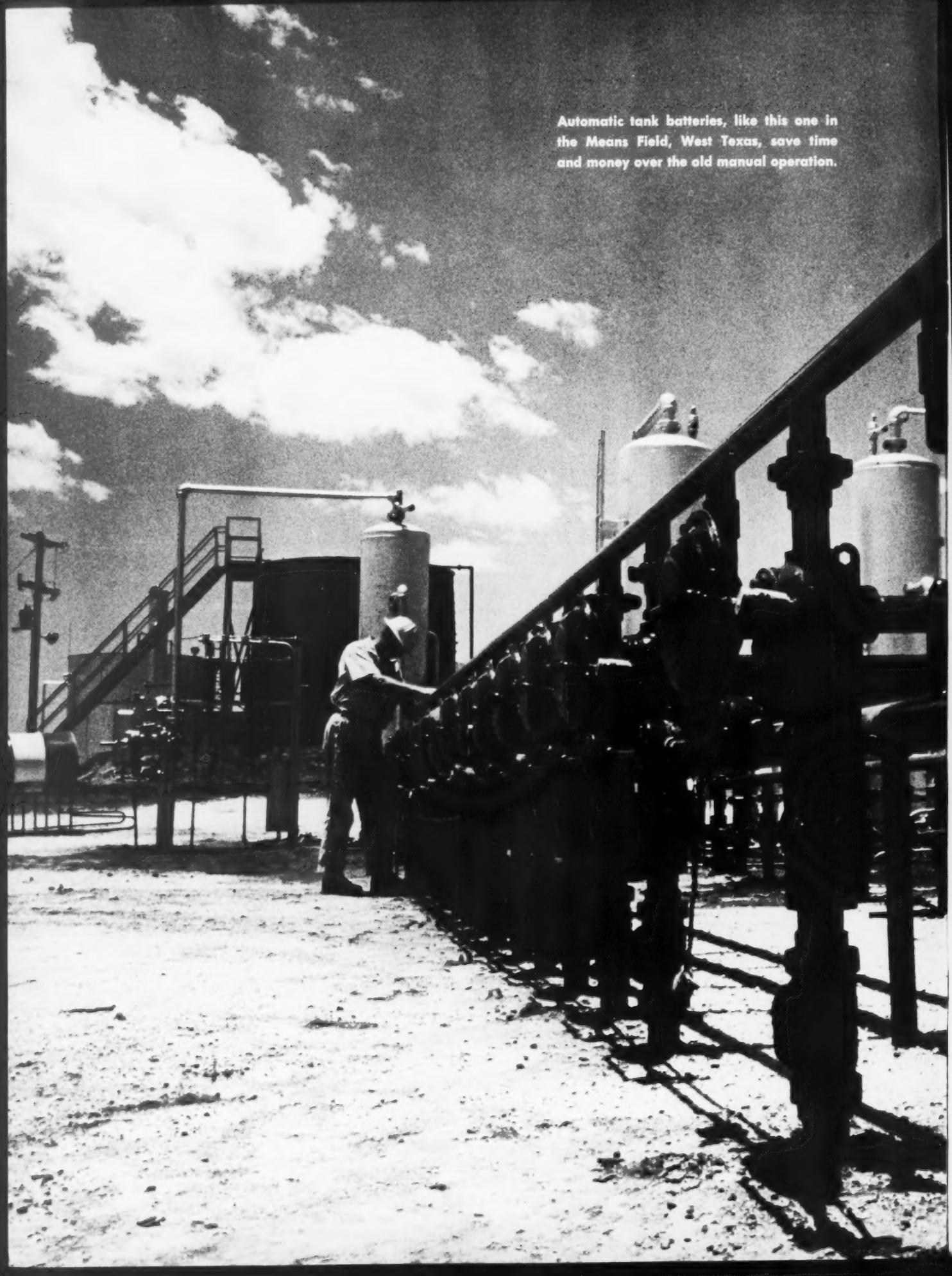
On Bayou Cocodrie — *Lloyd Hawthorne*

The Humble Way

JULY-AUGUST, 1958



Automatic tank batteries, like this one in the Means Field, West Texas, save time and money over the old manual operation.

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The Future of Oil and Gas in Texas

By Richard J. Gonzalez
Director, Humble Oil & Refining Company

THE FUTURE of oil and gas in Texas will depend on our efficiency in discovering and developing local resources and on the effectiveness of competition from other sources of supply and from other forms of energy.

Within the past decade, Texas has lost position in both domestic and world markets—not because of any lack of ability of its wells to supply more oil, but because of intense competition from other areas. During this period, other areas in the United States and in the world have increased their reserves and production at a much faster rate than Texas. Temporarily, Texas' participation in output is down to about 35 per cent of the United States and 14 per cent of the world. This results from the adherence of Texas to the principles of its conservation laws and to the slowness of other producing areas to realize that as their importance in the markets increases they must bear their part of adjustment to changing conditions. In Arabia and Kuwait, for example, it is not unusual for wells to average more than 5,000 barrels daily. With less than a thousand producing wells, the Middle East surpassed Texas in crude oil production in 1954 and has continued to pull ahead since then.

Two lessons can be learned by the domestic oil industry from a review of past experiences: (1) Orderly development and marketing of oil can contribute substantially to economic progress and military strength. Failure to conserve oil leads to waste and to shortages when we need oil most, as in wartime. (2) The domestic oil industry must gear its exploration and development programs to future prospects rather than to past trends. In Texas, the rate of increase in crude oil production from 1928 to 1948 averaged 6½ per cent compounded annually. Since 1948, the rate has dropped to about two per cent annually.

Forces Affecting Texas Oil

The oil industry in Texas is currently affected, and will continue to be affected in the foreseeable future, by keen competition from:

- Other domestic crude oil production.
- Natural gas liquids.
- Imports of crude oil and products.
- Natural gas, coal, and other forms of energy. (Shale oil and nuclear power, while not now effective competitors of oil and gas, are at the threshold of becoming economically feasible.)

Local consumption of petroleum products in Texas has been increasing, but still represents only 20 per cent of the state's output of crude oil and natural gas liquids. In both of the principal markets for Texas oil—the East Coast and the Mid-Continent area—there is increasing competition from domestic and foreign oil. Foreign oil has absorbed a major part of the increase in demand on the East Coast since 1948. In the Mid-Continent area, oil from Texas has to compete with local production, as well as with oil from Louisiana, the Rocky Mountain states, and Canada. Refineries on the West Coast are finding it advantageous to bring in oil by pipelines from Canada and by tankers from foreign countries.

Notes from an address before the Eleventh Oil Recovery Conference, Texas Petroleum Research Committee, Austin, May 9, 1958.

The competitive position of domestic oil has also been affected adversely by rising costs. Since World War II, costs have gone up substantially and rate of return on new investments has declined. Coupled with these circumstances is the fact that fewer major discoveries are being made to add substantially to new reserves. Costs and the competitive position of operators in Texas have both been impaired by a progressively restricted output per well, combined with rising prices paid for services and materials.

Current problems of the domestic oil industry cannot be blamed entirely on the business recession or on imports. They result in part from other factors, including the continued expansion of domestic productive capacity at a rate faster than demand, plus the improved competitive position of other fuels, particularly natural gas. Postwar, the rate of growth in the use of gas has been about 8.5 per cent annually, a much greater rate of growth than for oil. Coal has also become a stronger competitor as a result of new machines which have enabled the coal industry to increase substantially the output per man-hour of work. In the generation of electric power and in large industrial uses, where price is the prime consideration in the type of fuel used, coal has held its own against oil and gas in areas where coal is produced in large quantities.

Prospects for the Future

Because of the highly competitive energy market in the United States, coupled with other forces, it is probable that the demand for petroleum products in the future will increase at about the same rate as the growth of total energy consumption—which is likely to be around 2.5 per cent annually. This means that the industry will have to slow down its rate of expansion. Natural gas, on the other hand, can be expected to increase more rapidly than the use of total energy, at least for the next ten years.

The present national policy seems to be to hold constant the present participation of crude oil imports in the domestic market. If this policy is maintained, the future growth of domestic oil production should be at the same rate as demand. Any change in the relation of imports to domestic demand, either up or down, will have a corresponding impact on the demand for domestic supplies.

Domestic producers, in the next few years, will necessarily be concerned with measures to achieve a more efficient development of domestic oil and gas resources in order to improve their competitive position. A number of steps which will be helpful in this connection are:

- A realistic timing of investment so that the industry does not develop capacity far ahead of needs. This will help reduce the burden of shut-in capacity and will help control both investment and operating costs.
- Through careful spacing of new development wells, help control costs by increasing the amount of reserves per well.
- Achieve greater recovery of reserves from existing wells by better methods of primary and secondary production.

Summary and Conclusion

The prospects for the oil industry in Texas are not so bright as one could hope and appear less favorable at the moment than in the past. The prospects are for some future long-term growth, but at a much slower rate than in the past. The outlook for natural gas is good, because there is likely to be a rather rapid increase in the local consumption of gas within the state. Also, there is potential growth in interstate shipments of gas if a satisfactory solution is found to the present difficulties arising from efforts to apply utility-type controls to such shipments.

It is anticipated that there will be an improvement in production in Texas this year from the subnormal levels of eight producing days a month, but there seems little likelihood of more than 15 producing days a month in Texas for several years, unless some emergency arises. The current reduction of drilling should serve to bring development of new capacity in line with long-term prospects, and to improve the prospects for production at a higher percentage of maximum efficient rates if it continues long enough.

Developments now unforeseen may improve the outlook at some future date, as they have in the past. After the present period of readjustment is over, the rate of growth in the years ahead will be influenced in considerable part by the effectiveness with which operators can find and develop new sources of supply in Texas at reasonable costs.

The destiny of the Texas oil and gas industry depends on the wisdom with which operators, commissioners, and legislators deal with current and future problems. The combined efforts of these groups have resulted in extraordinary progress in our oil and gas production in the past. Texas can render no greater service for the future progress and security of the nation than to exert its fullest leadership in the direction of greater efficiency in the development and production of oil and gas.

First Half Operations Drastically Reduced

Mid-year report shows the effects on Humble's net income of curtailed petroleum production in Texas and Louisiana

The following report on Company operations for the first half of 1958 was mailed to shareholders on July 30, and also was distributed to employees.

THE MOST drastic curtailment in recent years of petroleum producing operations in Texas and Louisiana operated to reduce Humble's net income sharply in the first half of 1958. The magnitude of the curtailment is indicated by the reduction of producing days allowed in Texas, where Humble has most of its production, from 96 in the first half of 1957 to 56 in the first half of 1958.

The change in industry operation between the first six months of 1957 and 1958 reflected not only the loss of export demands but also a shift from accumulation to liquidation of inventories. A large part of this inventory adjustment appears to have been completed even though imports of crude oil and products have remained high in relation to domestic production. Domestic inventories are now in a better position than they have been for some time. As a result, production in the second half of the year should increase substantially from recent levels. Accordingly, the rate of Humble's operations and income for the second half of the year is expected to be better than in the first half.

Estimated net income for the first half of 1958 was $57,182,000. In the corresponding period of 1957, when production was increased to meet unusual demands while the Suez Canal was closed, net income was estimated to be $107,788,500, as reported to the shareholders on August 9, 1957. This estimate has now been revised upward to $116,135,700. The revision reflects primarily a change in estimated federal income taxes based on the results realized for the entire year.

Net income per share in the first half of this year was 79 cents, compared with the revised figure of $1.62 for the same period last year. Dividends per share were 65 cents in the first half of 1957 and 70 cents in the first half of 1958. For the third quarter of 1958, a dividend of 35 cents a share has been declared payable on September 10, 1958, to shareholders of record on August 11.

For the first half of 1958, Humble's net crude oil production averaged 282,000 barrels daily, or 28 per cent lower than for the same period last year. Through June of this year, the Company's production was restricted to less than one half of its maximum efficient producing rate. Volumes of crude oil refined declined 18 per cent, and 24 per cent less crude oil was transported by pipeline. In contrast, gasoline volumes marketed by Humble through retail outlets were 6 per cent greater in the first half of 1958, and the volume of natural gas sales increased over the first half of 1957, continuing the upward trend of recent years.

Humble has reduced its drilling operations and capital expenditures substantially in view of current conditions. Offshore well completions were reduced drastically, and total completions were cut to 279 compared with 430 in the same period last year. Capital expenditures, including the cost of producing wells, amounted to $92,232,900 in the first six months, a reduction of $17,095,500 from the outlays a year ago. Dry hole costs were reduced by about $12,413,900, while other exploration activities and related expenditures remained at about the same level.

On July 2, Standard Oil Company (New Jersey), which owns about 88 per cent of Humble's outstanding capital stock, announced that it planned to offer Humble shareholders approximately five shares of Standard's capital stock for each four shares of Humble. If and when an offer is made, Humble shareholders will be notified by Standard Oil Company (New Jersey) of the terms of the offer through a prospectus.

	1958	1957	
	First Half[1]	First Half[1]	Year
FINANCIAL DATA			
Total Operating Revenue	$554,406,900	$667,705,900	$1,270,826,700
Net Income	57,182,000	116,135,700[2]	175,910,400
Taxes (Including Federal Income Taxes)	28,287,100	37,069,700[2]	65,672,800
Dividends Paid	50,288,300	46,628,500	96,902,200
Capital Expenditures	92,232,900	109,328,400	235,395,400
Exploration Expenditures Charged Currently to Expense:			
Total	46,095,700	58,032,600[2]	121,121,400
Dry Holes	17,266,800	29,680,700[2]	61,792,100
Net Income Per Share	$ .79	$1.62[2]	$2.45
Dividends Per Share	$ .70	$ .65	$1.35
OPERATING VOLUMES— Barrels Daily			
Net Crude Oil Production	282,000	392,400	360,600
Crude Oil Refined	199,500	243,600	234,500
Trunk Line Deliveries	557,100	734,100	675,200
WELLS DRILLED BY HUMBLE			
Producing	219	320	648
Dry	60	110	219

[1] *Unaudited.*
[2] *Adjusted for purpose of comparison.*

Humble's broadcast teams have covered a

GENERATION

TEXAS servicemen stationed all over the world during World War II followed the fortunes of their favorite Southwest Conference teams via Armed Forces Network radio broadcasts. Oddly enough, many of those men wrote letters to the Humble Company saying "Thanks for sending these broadcasts to us."

Why was that odd? Because, although Humble made its regular Conference game broadcasts available to the service network, the Company's name was never mentioned in the version that went overseas. Men from Texas just naturally thought of Humble when they listened to Southwest Conference games. The two were that closely linked in their minds.

The same is true for millions of radio listeners and television viewers today as Humble makes preparations for its 25th year of football broadcasting.

During the 1958 season Humble will bring football fans of the Southwest one of the most comprehensive schedules of radio and television coverage in its history. Some 70 football games will be beamed out over about 125 Texas and New Mexico radio stations. Four Southwest Conference contests will be televised, and viewers also will be able to see a 45-minute video-recorded version of the week's top game each Sunday evening on Humble's new "Game of the Week" program.

That schedule contrasts sharply with the program in 1934, when Humble began its association with Southwest Conference football by sponsoring the broadcasting of three Rice Institute games as a public service over Radio Station KPRC in Houston.

Sports broadcasting was a new field in those days, and there was much to be learned about all phases of it. Naturally, there were no experienced play-by-play announcers around Houston, so a prominent newspaper sports editor agreed to handle that difficult chore on the first broadcast—a game between the Rice Owls and the University of Texas Longhorns.

Action reached a climax when a Longhorn back shook loose for a long run, closely pursued by an Owl tackler. The announcer, carried away by the excitement, could only grip the microphone and shout, "Fans! Oh, fans! You ought to be here!"

If announcers found football broadcasting difficult that first year, they weren't alone. Problems also plagued the radio engineers. Working in crowded press boxes or in the open stands, they faced new headaches at every turn.

Take the second broadcast of that season, for example. Rice travelled to Fayetteville to play Arkansas, and Humble sent a crew along to beam the play-by-play account back to Houston.

Everything ran smoothly until the kickoff. Then telegraphers in the press box began to send their game reports to newspapers. The clatter of the telegraph keys fed into the announcer's microphone, and electrical interference from the telegraph instruments set up a garbling noise on the broadcast lines. Listeners swamped the Humble switchboard in Houston with complaints. Quickly the crew in Arkansas was informed of the trouble. The broadcast went off the air for ten minutes while the crew picked up its equipment and moved to the other side of the stadium, where the commentary continued from seats in the stands.

Looking back on that first year, you might say that Humble's football broadcasts had a modest beginning. The significant thing, however, is how rapidly they improved. By the end of the 1935 season, the broadcasts had developed into well-planned and coordinated programs that were growing more and more popular with Texas sports fans.

It was in 1935 that the Southwest Conference adopted a uniform broadcasting policy. Until that year, some Conference schools had permitted game broadcasts; others had not. Some school officials felt that if fans could sit at home and listen to a game they would not attend the contest, but these fears proved unfounded. Radio coverage generated such an interest in Southwest

N OF FOOTBALL

Modern, soundproof booth atop giant stadium contrasts sharply with facilities available to radio men in 1934, when Humble began its Southwest Conference football broadcasts. Sketch on opposite page depicts early broadcast team operating from seats in grandstands.

Conference football that the broadcasts actually stimulated attendance instead of hurting it.

When Conference officials decided that game broadcasts should be permitted, they began to look around for one company to sponsor all of the radiocasts. They had studied a similar arrangement in the Pacific Coast Conference that was apparently successful.

Humble was interested. Those three broadcasts in 1934 had proved that Houston fans enjoyed and appreciated the play-by-play accounts of Rice games. The Company now saw an opportunity to render a public service to its friends and customers all over the state, and to make use of an effective advertising medium at the same time. Its bid to broadcast the games was accepted by the Conference, and thus began a business relationship that has now spanned almost a quarter of a century.

The weekly radio broadcasts would now supplement the newspaper and outdoor media which had heretofore constituted about all of the Company's advertising, and provide an excellent means of helping to promote the sales of Esso Extra Gasoline and 997 Motor Oil, which had been introduced three years earlier.

Everyone pitched in to make the

Bulky padding worn by 1934 football players gave them boxlike shape, as this action picture of Southwest Conference game shows. Early grandstands would hold only a few thousand fans.

broadcasts a success—radio stations, engineers, the telephone company, Humble's advertising agency, and the many individuals who were selected for the broadcast crews.

A young man named Kern Tips tried his hand at football announcing that year and liked it. His accounts of the derring-do of gridiron gallants caught the fancy of the public, and he soon became the foremost Southwest Conference football announcer. Other fine microphone men joined the corps through the years, some moving on later to jobs with national networks.

Audiences grew, and radio ratings of Southwest Conference football rocketed upward. Humble's broadcasts soon were among the most popular programs on the air in Texas.

In 1935, opinion polls were about as new as football broadcasting, but Humble, having tried one, decided to try the other. The Company asked Texans to vote for or against continuing its broadcasts. Ballots were distributed through service stations, and the poll was publicized on the last few broadcasts of the 1935 season.

Cards and letters poured in. Petitions to keep the football games coming were circulated and signed by thousands. When the votes were counted, football broadcasting had won a resounding endorsement.

New products were rapidly being introduced. The job of selling these new products, as well as those already on the market, required a sales campaign spearheaded by effective advertising. Radio —especially the football broadcasts— began to play an important role in Humble's advertising drive.

During that period, the broadcasts were extended, techniques were refined, and coverage expanded. Each year the Company broadcast more games over more stations. The Humble Football Network, a system of leased telephone lines, was set up to channel the programs to stations throughout the state. Humble broadcasting crews followed Southwest Conference teams all over the nation.

When World War II started, the broadcasts became even more a public service and less a product advertising medium for the Company. Most of Humble's refined products were flowing into the defense pipeline to help win the war, and rationing of gasoline reduced the need for product advertising. Wartime commercials consisted of institutional advertising, and about half of the commercial time was devoted to bond drives, recruiting, and other war efforts.

Salesmen wore boots and gasoline pumps were tall in 1934, when Humble's first football announcers invited customers to drive in for good service, Esso Gasoline, and 997 Motor Oil.

NEVERTHELESS, the football broadcasts continued as regularly as wartime operating conditions would permit. There was, of course, a shortage of personnel to handle the programs, and travel to games was difficult. Airline tickets were almost impossible to get; trains were packed. So Humble's announcers, engineers, and supervisors usually piled their equipment and themselves into one car and drove to the distant stadiums.

Personnel problems also were plaguing Conference teams about that time. With most able-bodied young men in the service, coaches found it difficult to field a team of the calibre normally expected in the Conference. One of Humble's broadcast supervisors recalls

the time a coach jokingly asked him to suit up and play fullback in a crucial game. The supervisor declined the invitation.

Within 10 days after V-J Day, the Company placed on the market a vastly improved Esso Extra gasoline. Later came Uniflo Motor Oil and Golden Esso Extra gasoline. The number of service stations bearing the Humble sign more than doubled in a few years, and sales volumes shot upward.

INTEREST in college football reached fever pitch in Texas after the war. Stadiums weren't large enough to hold the crowds that flocked to watch Southwest Conference contests. The existing structures had to be enlarged or new ones built.

New radio stations were springing up across the Southwest like spring corn after a drought-breaking rain. Humble's football coverage was gradually increased until a total of more than 100 Texas radio stations carried the broadcasts. In the early 50s, when the Humble sign moved into the South Plains and the Panhandle, the games of Texas Tech joined the schedule; and when the Company extended marketing operations to El Paso and into New Mexico three years ago, the games of Texas Western University and the University of New Mexico were added.

Television reached Texas in 1948. The state's first station, WBAP-TV in Fort Worth, was only one day old when Humble telecast the first football game to be seen on television in Texas, TCU versus Arkansas. There weren't many receiving sets in the Fort Worth area that year, but the Company continued to telecast the Horned Frogs' home games for the rest of the season. The new medium had to be tested sometime, and this was as good a time as any.

As new TV stations came on the air, football coverage was gradually expanded. In 1953, the National Collegiate Athletic Association set rules on sales of game telecasts. Under its rules, each Conference is permitted to sell regional television rights to four of its conference contests each season. Sell-out games are permitted to be telecast, under certain conditions, in the home towns of the two competing teams. The national sponsors may relinquish such rights to the Conference for sale to its regional sponsor. Humble, as the successful bidder, has bought Southwest Conference television rights each year since 1953. (In 1957, a quirk in the schedule made it possible to telecast only three games.)

Trim appearance of today's players, apparent in this photograph taken during 1957 season, results from development of lighter, safer equipment. Modern stadiums dwarf early stands.

This year's schedule calls for TV coverage of the Baylor vs. Texas Tech, SMU vs. Georgia Tech, Rice vs. Army, and Texas vs. TCU games, over some 22 stations.

Many a radio listener and television viewer, following Kern Tips' play-by-play accounts this season, will recognize players' names that sound familiar—names they heard him mention many times during the 30s. And they'll say to themselves, "I wonder if that's old Jumping Johnny Doe's son." Their thoughts may drift back to other days when another generation of young men played the same game on the same fields.

And chances are, if you asked them who has brought those games into their homes over the years, they would answer without hesitation, "Humble."

Modern Humble stations feature Golden Esso Extra gasoline, Uniflo Motor oil, friendly service, clean rest rooms; customers are regularly reminded in football broadcasts, telecasts.

Walking pipe section into shallow San Jacinto Bay, crawler tractors flex muscles of side-booms. Straight ahead is rugged 2.6-mile leg of the new loop to increase capacity of Humble's existing natural gas line from Clear Lake to industrial plants in Port Arthur area.

Builders of Humble's new 78-mile natural gas pipe line meet the challenge of a . . .

CHANNEL CROSSING

LAYING a pipe line across a bald prairie is one thing. Laying one across a stretch of water is quite another. Make that stretch of water the Houston ship channel, busy with burdened barges and ocean-going vessels, and the job becomes even more complicated.

The natural gas pipe line project in the accompanying picture-story is the toughest leg of a 78-mile loop to Humble's existing Tomball Gas System line between Clear Lake and Port Arthur. In pipeline language, a "loop" isn't really a loop at all, but an artery paralleling, and connected with, the main line. Its function, of course, is to boost the system's capacity.

The installation of this line—68.2 miles of 30-inch and 9.8 miles of 24-inch—is designed to meet immediate and future demands for natural gas in the Beaumont-Port Arthur industrial communities. Eventually, it will be linked to the proposed 241-mile, 30-inch gas line between Clear Lake and the planned King Ranch Gas Plant.

Crossing the Houston ship channel was only part of the pictured 2.6-mile hop from mainland to island to mainland. One contractor laid line from the Clear Lake side east across San Jacinto Bay and through marshy Busch Island. At the same time, another contractor pushed pipe from a point near Humble's Baytown Refinery west across the ship channel to the island. On July 10, as an ocean freighter looked on, the two lines were welded into one.

Digging trench for line across muddy bay floor, dredge chews its way toward Busch Island. Beyond is ship channel, Baytown Refinery.

Ready for launching, pipe assemblies await their turn near water's edge. Empty barrels, 4,400 of them, provide buoyancy during laying.

Lining up heavy sections of pipe for welding requires skill, teamwork. Ends must match perfectly so that welded joints will be strong.

Welded to string already launched, assembled pipe is pushed ahead into water. Unwelded pipe lengths measure 40 feet, weigh 14 tons.

X-ray negative, processed on spot, reveals any hidden flaw in welding job. Joints must be able to withstand as much pressure as pipe.

Quick-drying concrete poured around joint adds weight and protects weld. Without weight-coated pipe, line would pop up in water, float.

On opposite shore, another crew pushes pipe from Baytown Refinery across Houston ship channel to join new line coming from Clear Lake.

BARGEWAY

OF THE GOLDEN CRESCENT

The Gulf Intracoastal Canal, once but a dream, is today a vital and bustling water highway

METHODICALLY, the two mammoth dredges inched toward each other across the shallow Texas waters of Laguna Madre. When they had clawed away the narrow bridge of mud, sand, and shell that separated them, the last link of the $80 million Gulf Intracoastal Canal was forged.

To many, this historic bit of digging on June 18, 1949, was a transportation dream come true. It opened, after 40 years, a water highway from the Rio Grande at Brownsville to Florida's Apalachee Bay, below Tallahassee.

To the casual observer, today's busy Intracoastal Waterway seems little more than a coast-hugging, oversized trench filled with salt water. But its inland protection affords economical, year-round water transportation without the hazards of navigating the high seas. Tying the entire Gulf Coast region to the nation's sprawling 28,000-mile system of waterways, the canal is one reason for the rapid industrial expansion of the Golden Crescent—the productive province that arches along most of the Texas-Louisiana shore.

As the Intracoastal threads 1,116 strategic miles along the curving perimeter of the Gulf, it presents an ever-changing panorama to offset its own drab personality. It plows the South Texas plains where grazing cattle lazily note tugboats chugging goods to the marketplaces of the nation. Past the home of the whooping crane, it cuts across big, open bays that show their teeth when the north wind is up.

Leaving Texas, it enters Louisiana's blossom-lined bayous, where cypress with bony knees wear shawls of Spanish moss. Then it traverses the Mississippi River before rambling off across the coastlands of the Old South to the modern water playgrounds of Florida.

Its scenic beauties aside, the Intracoastal gave little hint of its vast potential until World War II, when it played an important role in Allied victory. While tankers and freighters within sight of land fell prey to enemy U-boats, barges laden with 90 million tons of vital war supplies such as aviation gasoline, synthetic rubber, tolulene, and sulphur plied the canal in complete safety.

In peacetime, as in wartime, the protected inland water road knows no peer. Longer than the Panama Canal, Suez, Erie system, and Germany's Kiel combined, the Intracoastal in 1956 carried more than 45 million tons of freight—nine times the yearly amount originally estimated necessary for the canal to pay its own way. The estimated $83 million saved in shipping costs by users of the canal in that one year more than offset its entire cost.

Like a watery magic wand, the Intracoastal seems to bring new life to all it touches. Nine of the nation's 15 largest seaports (in total tonnage) are

Continued on page 15

Lengthy Intracoastal weaves 1,116 miles along Gulf Coast from the toe of Texas to the curving throat of Florida. Barges transport 45 million tons of freight over the canal each year, enough to rank it high on the list of the world's busiest inland waterways.

Cane and Oil Near Houma — *Lloyd Hawthorne*

Sulphur Moves to Market

Much of the world's sulphur supply, mined in the Louisiana-Texas coastal region, moves to market via the Intracoastal Canal. Here, artist A. E. Kaeppel depicts a loading scene at Galveston.

Birds and Barges — *Lloyd Hawthorne*

Locks at Matagorda
A. E. Kaeppel

Continued from page 10

served directly by the canal system. The artery also helps sustain dozens of smaller ports along the Gulf—fishing villages, oil operations outposts, and industrial sites away from congested population centers. Along its banks, some 500 companies have built plants, warehouses, and barge slips.

Small businessmen have benefited with the big. Thanks to the canal, farmers and cattlemen of the lower Rio Grande valley have an economical outlet for shipping non-perishable fruits, vegetables, cotton, and beef to market. To the fishermen of the shrimp fleet, the waterway is literally a life-saver; they can follow good fishing from Florida to Mexico with practically no physical risk.

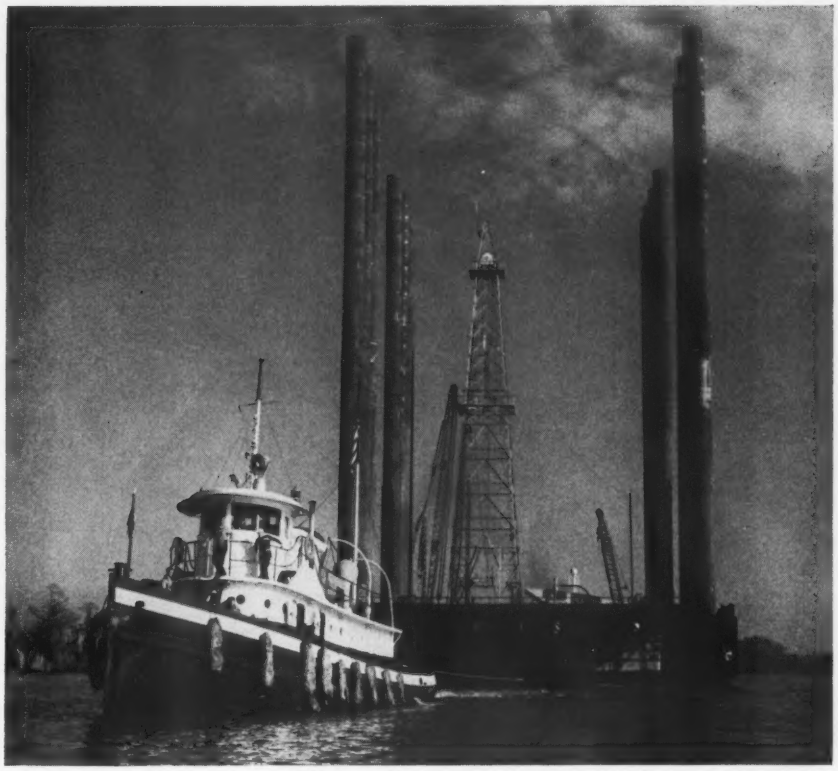
Raw commodities move along the teeming Intracoastal in a never-ending parade of good things that come from the earth and the sea—iron, steel, aluminum, sea shells, lumber, sulphur, salt, coal, rice, sugar, limestone, paper, and many others. On the canal, it's not unusual to meet a shipment of shiny Detroit-made automobiles headed for Houston, or a bargeload of Pittsburgh-forged drill pipe bound for Corpus Christi.

The petroleum industry, not surprisingly, is by far the Intracoastal's biggest user. About two-thirds of the tonnage moving over it yearly consists of petroleum and petroleum products.

To Humble, the canal is a convenient sheltered bargeway between Baytown Refinery and products terminals located along the Texas coast. It also serves the Company's major crude oil loading terminal at Harbor Island, near Corpus Christi. In several Texas ports, ocean-going vessels take on Humble bunker and marine diesel fuels barged along the canal system from the refinery. Humble also ships refined products and petrochemicals south to Brownsville, east to New Orleans and up the Mississippi.

A COMMON sight along the canal is a churning tugboat pushing three oil barges, ratcheted tightly together to form a unit longer than many large luxury liners. These tows run 24 hours a day; at night they are guided, in varying situations, by moonlight, a system of blinking markers, and their own searchlights.

By means of "tripping"—breaking up a long string of barges into single units—canal captains safely steer their oil cargoes past the big bisecting rivers when these streams are angry with flood waters.



Enroute to offshore site, mobile drilling barge is towed along Intracoastal. Oil industry is canal's biggest user; two-thirds of tonnage on waterway is petroleum and its products.

Refineries, oil fields, gas plants, and tank farms can be seen along the canal's banks. In Louisiana, exploration parties, drilling crews, and well service teams know the Intracoastal as a Main Street of oil activity along the Continental Shelf. Here, oilmen assigned to giant platforms in the offshore depths cross paths with oilmen who track petroleum into the swamps and marshes.

Sportsmen, like oilmen, are finding the canal a versatile friend. Yachtsmen, fishermen, hunters, and just plain vacationers are flocking to Gulf Coast beaches, bogs, and bayous in record numbers.

But pioneers of the Intracoastal envisioned something more than a nautical highroad for pleasure seekers. They sought economical, efficient water transportation, from the Great Lakes down the Mississippi and around the Gulf Coastal bend to Mexico.

Time and determined men like C. S. E. Holland, a Victoria banker, found a way. Back in 1907, the U. S. Corps of Engineers dredged the first stretch of the canal—a 53-mile channel in Louisiana scarcely 40 feet wide, and five feet deep.

TODAY, half a century later, the robust Intracoastal is 125 feet wide and 12 feet deep along most of its thousand-mile length. Completely fitted out with locks, flood-control dams, and vein-like side canals running up to growing inland cities and thriving industrial plants, the canal is an ever-active economic catalyst to the development of the South and Southwest.

But those vitally interested in the waterway aren't yet satisfied. Looking to the future, they dream of extending the Intracoastal down the mineral-rich Mexican coast to Tampico and Vera Cruz. Already, Congress has approved plans to push the canal across the 160-mile neck of Florida to connect with its sister, the Atlantic Inland Waterway. When this happens, 2,500 miles of sheltered water route will link Brownsville and Boston.

That, as one grizzled tugboat skipper puts it, will be some ditch.

In regular classroom instruction periods, students of the Reservoir Engineering School are coached on the fundamentals by some of the industry's foremost experts—all Humble employees. In various labs, trainees also delve into practical aspects of reservoir engineering.

HUMBLE'S SCHOOL OF

Reservoir Engineering

In classrooms and labs, engineers learn how to produce more oil, more efficiently

Trainees determine the characteristics of a petroleum sample in hydrocarbon laboratory.

IN a classroom at Humble's Houston Research Center recently a group of 40 petroleum engineers and scientists packed up their slide rules, cleaned out their lockers, and concluded one of the most significant employee training courses conducted anywhere in the petroleum industry.

They were members of the 13th graduating class of Humble's Reservoir Engineering School, a 12-month course of specialized training designed to help engineers learn how to get more oil out of the ground, and to do it more efficiently.

After a year in the classrooms,* the young engineers—most of them new employees and recent college graduates—are reassigned to various field positions where they start putting into practical use the reservoir engineering knowledge acquired in the training course. They study all of the available physical and operating data on oil and gas fields and estimate the effect of various development and operating practices on the ultimate oil recovery. From their studies, the engineers are able to determine desirable well spacings, the best operating methods and procedures, and maximum efficient rates of production. And most important, they seek ways and means of coaxing more oil and gas from nature's reservoirs.

It is a difficult task, admittedly, but one for which the Reservoir Engineering School graduates are well equipped. They have been coached on the complex subjects by some of the industry's foremost reservoir engineers —all Humble employees—who have

*The 13th class included a few students who were already on field assignments in the Houston area and commuted to the class room sessions. A group of Eastern Division engineers also attended special classes in the New Orleans Office on a similar basis.

passed on the accumulation of years of practical experience and knowledge.

Humble's Reservoir Engineering School, established in 1944 on a three-months' trial basis, was born of necessity. Its purpose was to help fill a serious gap in the petroleum engineering field—a need for more knowledge of reservoir technology. By and large the college curriculums and other engineering training did not incorporate a sufficiently advanced and thorough coverage of the subject. Although a considerable fund of reservoir information had been developed through the years, it was widely scattered and not readily available to engineering students. The most reliable source of reservoir engineering technology, Humble management felt, was from the Company's own reservoir engineers, the men who had met and solved many reservoir problems in the past.

Why not establish a school in which these experienced and trained personnel could relay their knowledge to other young engineers just coming into petroleum reservoir engineering work? This was done, and the Reservoir Engineering School proved a success from the beginning.

The need for knowledge of reservoir engineering was not widely recognized in the early days of the oil industry. Conservation and efficient production practices were unheard of. Wells were drilled as close together as possible, and allowed to flow unchecked as long as they would produce. When the wells died, the operators moved on in quest of new discoveries. Although some of those old fields are still producing, most of them were quickly exhausted by overproduction and only a fraction of the oil in the reservoirs was recovered.

Gradually, however, oil men gained a better understanding of reservoirs and the most efficient development and operating methods. And as the industry began to mature, there was growing recognition of the fact that large amounts of oil were being left in the ground. Engineers were faced with this challenge: Get more oil out of new discoveries, and increase the ultimate recovery from older producing fields. An increase of only one per cent could, in some reservoirs, mean as much as a million barrels of additional oil.

Engineers began to piece together facts about reservoirs, their histories, their nature, physical properties, and characteristics, how they behave and react to changing operating conditions, and why. Fields were charted more carefully, so that ultimate production could be estimated to within a few thousand barrels. Nature's driving forces which pushed the oil from the reservoirs to the surface received more thoughtful consideration. Maximum efficient recovery (MER) rates were figured. Everywhere in the industry, reservoirs —those enigmatic structures of oil, gas, and water trapped under pressure in formations deep within the earth—were studied as laboratory guinea pigs.

This was the situation in 1944, when eight petroleum engineers were assigned as students in Humble's first Reservoir Engineering School. Actually, the three months' session was more of a short course than a school. It was designed primarily to consolidate what knowledge already had been accumulated by experienced Humble engineers.

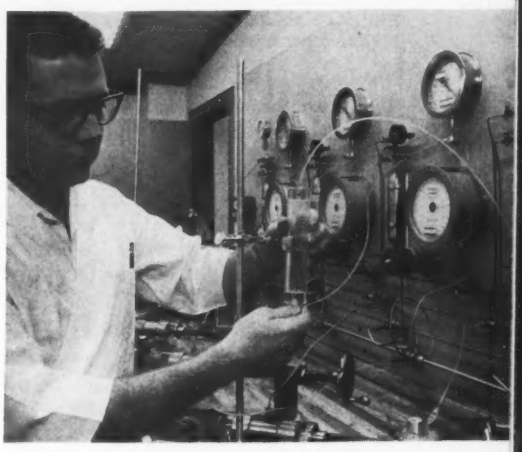
IT WAS in 1954—10 years later—that the course was lengthened to one year and lab training was added to the regular classroom instruction. For the first time, students could back up their class work with lab experience. Students now spend more than half of the year's training period on various laboratory assignments. In core labs, hydrocarbon labs, formation evaluation and computing groups, the students delve into practical aspects of reservoir engineering. They interpret and report on field data flowing daily into the laboratories from the various oil and gas samples, conduct experiments with well cores, and learn to solve practical problems.

Some educators rate the training obtained in the school the equivalent of a masters degree in engineering.

But the real proof of the value of the course is found in the oil fields where alumni are successfully solving reservoir problems. It is estimated that graduates of the school have helped increase Humble's oil reserves by millions of barrels, and additional gains are expected in the future.

With proper scientific secondary recovery techniques, coupled with good reservoir conditions, more than 80 per cent of the oil in a reservoir may now

Sand-filled tube simulates reservoir in enriched gas drive recovery laboratory test.



In core lab, samples of reservoir rock are flooded for evaluation of their properties.

Student uses gas expansion apparatus to determine the porosity of a reservoir rock.

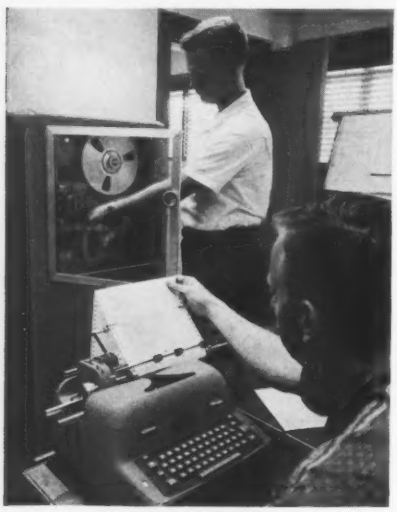
Intricate equipment in core lab helps Reservoir Engineering School trainee measure rock's relative permeability—the relative ability of fluids to flow simultaneously in a reservoir.

Evaluation of capillary forces in rock helps determine the fluid content of a reservoir.

be recovered. Recoveries of 40 to 60 per cent have become almost routine. This contrasts sharply with early day recoveries of around 20 per cent or less.

Many reservoir engineering and production practices and techniques have been developed and perfected by graduates of the school. Journey into Humble's operating territories today and you'll find outstanding examples of how the engineers are using their knowledge to increase oil recovery from old and new reservoirs.

Take, for example, the Fort Chadbourne Odom Lime Field in West Central Texas. Almost from the very beginning the reservoir pressure and production rate of this field began to decline sharply. Humble's reservoir engineers studied the problem and concluded that pressure could be maintained and more oil forced out of the reservoir by injecting gas into one part of the field and water around the remaining portions. Thus, the oil would be squeezed to the surface between gas and water drives. After the field was unitized to effect maximum efficiency, the program was initiated. The pressure decline was quickly arrested and new operating conditions were established which will greatly increase oil recovery at lower costs.



Digital computor is utilized to help solve highly complex field operating problems.

It is estimated that the program will increase recovery of oil from the field by 14 million barrels. The cumulative recovery to date has already surpassed that which would have been recovered under primary operation.

Another good example of effective reservoir engineering is in the Spraberry Field in West Texas. Here water will be injected into the reservoir, thereby pushing oil to the surface. Additional oil which will accrue to Humble as a result of this project is estimated at 25 million barrels.

ONE of the more unusual reservoir engineering projects of late is concerned with recovering upstructure oil in Grand Isle Block 18 Field, offshore Louisiana. In this project, gas is injected in the reservoir through the same well bore from which oil is produced alternately. The gas rises inside the structure, forcing oil downward to where it can be produced. In this manner, oil will be recovered which could not have been recovered without drilling additional wells. Three projects using this technique are planned in the Grand Isle area, with ultimate recovery expected to be increased by 1.4 million barrels.

In the Castaic Junction Field in California, Humble recently completed a third gas compressor station that will increase the gas injection repressuring program there. In that three-zone field, gas from all three zones is being injected into one of the zones. As a result of these repressuring efforts, ultimate oil recovery from the field may be doubled or even tripled.

The Company now has reservoir engineering projects in operation, or ready to go into operation, in 147 reservoirs which will yield to Humble an estimated additional 204 million barrels of oil. Other projects for 50 reservoirs are being studied which might result in additional recovery of 224 million barrels.

Graduates of Humble's Reservoir Engineering School have already contributed much toward increasing the nation's reserves of recoverable oil and gas. And as the store of reservoir knowledge increases, they will continue to make progress toward the ultimate goal of 100 per cent recovery of oil and gas from all reservoirs.

Recent Retirements

HUMBLE PIPE LINE COMPANY

Name	Location	Date of Retirement	Years of Service
Joe S. Allen	Clyde Station	July 1	33
Howard J. Bashford	Cisco	July 17	30
George L. Camfield	Cisco	June 1	29
Arthur E. Cunningham	Thompson Station	June 1	28
William E. Dickie	Cisco	June 25	24
Troy L. Dixon	Pendell Station	August 1	26
Walter P. Fade	Pampa	June 1	34
Victor O. Gorsen	Pierce Junction	June 22	35
Harold C. Guyton	Treasury-Houston	July 31	39
William W. Harper	Accounting-Houston Office	June 1	32
Edward J. Herr	Cisco	June 1	37
George W. Hudson	Cisco	June 1	34
Teddy D. Koon	Anahuac	June 1	33
Alvin F. Laughlin	Hearne Station	July 1	53
Freeman C. Lea	Odessa	June 4	36
Anson L. Lee	Truscott Station	July 6	28
Archie G. Lee	Baytown	July 7	36
Floyd Morehead	Groesbeck Station	July 1	25
George E. Martin	Longview	June 1	25
Burl W. Moyer	Eckert Station	June 1	32
Emery L. Nunley	Groesbeck Station	July 1	32
Verna L. Riley	Viola Station	July 1	29
George E. Selman	Mexia	July 1	37
Davis F. Robison	Pampa	June 17	24
Jake Schock	Odessa	June 25	35
John C. Ulrich	Satsuma Station	June 1	15

PRODUCTION DEPARTMENT

Hubbard A. Aman	Flour Bluff	June 9	32
Homer O. Anderson	Goose Creek	June 16	26
John W. Baldwin	Hawkins	June 1	35
Aaron D. Baker	Laurel	June 15	33
Brady C. Blake	Mallalieu	July 1	30
Robert E. Buckner	East Texas Div. Office	July 5	32
Issac A. Carter	Talco	June 1	33
William C. Cheshire	Katy Gas Cycling Plant	July 1	33
Dewey E. Clampitt	Beaumont	June 21	25
Fred G. Dickson	Flour Bluff	July 1	37
George Dickens	North Crowley	July 2	30
John L. Donahoe	Paradis	June 1	31
Dan Farrow	Government Wells	June 30	34
Sam U. Funderburk	Raccoon Bend	June 1	34
Tony J. Frank	Wasson	June 1	37
Clarence E. Gathright	Greta	July 1	29
Marvin L. Gilbert	Government Wells	June 1	28
Homer Greer	Conroe	June 12	34
Welton B. Griffiths	Stratton	July 7	36
Lester C. Grisham	Pampa	June 1	34
Lee Hadley	Kelsey	July 1	29
Burtis G. Harbison	London	July 1	37
Charles P. Henton	Pickton	July 1	38
John H. Huston	Conroe	July 16	28
Rivers F. Jennings	Raccoon Bend	May 27	27
Frank A. Jewell	Vernon	July 1	33
Grover C. Johnson	London	July 1	38
Marion F. Jones	Friendswood	June 2	36
Robert D. Mapes	Stratton	June 16	37
Homer L. Maples	Kelsey	June 1	34
Patrick J. McEnroe	Raccoon Bend	July 1	37
Ilay Manning	Conroe	July 1	33
William F. Meador	London	July 1	34
Francis W. Ober	Pampa	June 1	33
Charles V. Roberts, Sr.	London	July 7	31
Joe Rose	Wasson	June 1	29
Benjamin Seibold	Vernon	July 18	35
William "A" "J" Sevens	East Texas Gas Plant	June 1	32
John T. Shipman	Greta	June 2	33
Chester J. Sikes	Odessa	July 1	33
Ray E. Stearns	London	July 1	38
Wade H. Stephenson	Conroe	June 1	28
Early A. Stone	London	June 9	33
Albert D. Thomas	London	June 1	25
Albert M. Torrance	Wink	June 1	30
George Wingate	Ganado	June 24	32

EXPLORATION DEPARTMENT

James C. Cunningham	West Texas	July 1	32

BAYTOWN REFINERY

Apolonio Albarado	Labor Dept.	June 1	31
Dee A. Albright	Pipe Dept.	July 1	15
Carl M. Allen	IHB—Butyl Plant	July 1	34
Matthew H. Andrews	Pipe Dept.	July 1	36
John H. Athey	Carpenter Dept.	July 1	22
Preston O. Barker	Rigging Dept.	June 1	15
Earl S. Barnett, Jr.	Yield Dept.	July 1	29
Miguel Bernal	Treating Dept.	June 1	31
Jesse E. Brady	Machinist Dept.	June 1	31
Martin E. Bramlett	Garage Dept.	August 1	29
Frank Brown	Rigging Dept.	June 1	37
Walter P. Bywaters	Machinist Dept.	June 1	21
Denson C. Burch	Machinist Dept.	June 1	34
George B. Carroll	Service Laboratory	June 1	41
Theodore F. Casey	Labor Dept.	June 9	15
Hayden H. Chapman	Insulation Dept.	July 1	29
James E. Clegg	Plant Protection Dept.	July 1	16
Virgil E. Collins	Machinist Dept.	July 1	29
Hugh N. Conn	Butyl Plant	June 1	21
Lester Conway	Boilermaker Dept.	June 1	31
Harry C. Cook	Storehouse	June 1	32
Arthur J. Courtney	Boilermaker Dept.	June 1	29
Charles E. Cranford	Pipe Dept.	August 1	31
Jesse E. Cranford	Pipe Dept.	June 1	29
Sherley D. Creel	Pipe Dept.	June 1	31
Jim Crow	Pipe Dept.	June 1	32
Cloid D. Davis, Sr.	Cracking and Polymerization Dept.	June 1	34
Oscar W. Davis	Railroad	June 1	33
Bentura Delgado	Labor Dept.	July 14	32
Alfred B. Die	Treating Dept.	July 1	31
Whit Erwin	Insulation Dept.	June 1	28
Henry Eilers	Labor Dept.	June 1	31
Lawrence L. Faulk	Garage Dept.	July 1	33
Malcolm M. Faulk	Distillation Dept.	July 1	33
Wilbur Fisher	Insulation Dept.	June 1	33
Willie D. Fisher	SO 2 Unit #1	July 1	31
John D. Flanigan	Treating Dept.	July 1	30
Jesse J. Ford	Garage Dept.	June 9	28
Walton D. Francis	Pumping & Gauging	July 1	30
Flimns S. Gaskin	Labor Dept.	June 1	26
Helen E. Gibson	Tech. & Research Div.	July 19	15
James E. Goodson	Electrical Dept.	July 12	24
William C. Green	Distillation Dept.	June 1	29
Adolph F. Grodhaus	Machinist Dept.	June 1	37

Recent Retirements—continued

Frank F. Haisler	Fire Equipment Dept.	June 16	28
Jesse Hambrick	Boilermaker Dept.	August 1	15
Wesley H. Hammack	Cracking Coils	July 1	29
Jack T. Hartt	Process Extra Board	July 1	16
Walter V. Heckler	Labor Dept.	June 1	15
Samuel E. Herring	Pipe Dept.	July 1	30
Oscar Holmes	Cracking Coils	July 1	36
Clifford C. Howell	Paint Dept.	August 1	29
Beryl Jewell	Lube Hydrofining Unit	June 1	36
Marion A. Jordan	Carpenter Dept.	July 1	15
Oscar A. Johanson	IBH—Butyl Plant	July 1	32
Eddie Johnson	Storehouse	June 1	30
Haywood O. Johnson	Garage Dept.	July 1	22
Francois A. Kilchrist	Pipe Dept.	June 15	30
Frank Kilpatrick	Treating Dept.	July 1	29
Jessie O. Lamb	Carpenter Dept.	June 1	32
John M. Lamb	Pipe Dept.	July 1	26
Joseph E. Lawrence	Garage Dept.	June 1	16
Duran W. Lee	Pipe Dept.	July 1	32
Bennie E. Liccioni	Service Laboratories	June 1	28
Samuel W. Lorino	Pipe Dept.	June 23	29
Clemente Lopez	Contact Lube Plant	June 1	29
Elias Martinez	Brickmason Dept.	July 1	37
Archie H. McClain	Oil Straining and Blending Dept.	June 16	29
Promise Morgan	Plant Protection Dept.	June 15	22
William C. Morton	Pumping & Gauging	June 1	32
Claud W. Moss	Pipe Dept.	June 16	32
Otho L. Nesselrode	Cracking & Polymerization	July 1	36
Coy Oliver	Labor Dept.	July 1	32
Ezra C. Parker	Reclamation Dept.	July 1	29
Henry C. Parker	Machinist Dept.	July 1	15
Simeon T. Pattillo	Machinist Dept.	June 1	20
August M. Pelly	Rigging Dept.	June 1	30
Elliott Perkins	Pipe Dept.	July 1	46
Adolph F. Piwetz	Garage Dept.	June 1	21
Jose E. S. Rangel	Labor Dept.	July 1	37
Walter W. Roberts	Welding Dept.	July 1	32
Willie A. Rogers	Pumping & Gauging	June 1	32
Ector L. Scott	Pipe Dept.	June 1	31
Luther A. Scott	Utilities Dept.	May 1	29
Albert E. Shepherd	Storehouse	July 1	35
Edwin T. Smith	Accounting General	July 21	30
Homer C. Smith	Labor Dept.	June 1	21
Israel Smith	Garage Dept.	June 1	35
Jessie C. Smith	Distillation Dept.	June 1	34
Ello J. Shimek	Boilermaker Dept.	June 1	15
Clifton E. Shugart	Operations General	July 1	33
Karl E. F. Stalhandske	Butyl Plant	June 1	30
Everett E. Staner	Treating Dept.	July 1	31
Alvin Sue	Labor Dept.	June 1	30
Tom M. Tanner	Distillation Dept.	June 1	30
Joseph M. Taylor	Naptha Rerun Unit	June 1	32
William F. Thain	Pipe Dept.	July 1	32
Emilo E. Van Zandt	Insulation Dept.	July 1	30
Madison S. Walker	Pumping & Gauging	June 1	30
William H. Walker	Fire Equipment Dept.	June 1	29
Cary J. Weaver	Oil Straining & Blending Dept.	June 1	37
Ramsey W. Webb	Solvents Dept.	July 1	30
Dessie White	Railroad Dept.	July 1	36
Welch W. Wier	Distillation Dept.	June 1	34
Alfred E. Wiggins	Labor Dept.	July 1	21
Allie L. Williams	Insulation Dept.	July 1	29
Irvin C. Wilkins	Cracking Coils	June 1	38
Wardie C. Wismer	Welding Dept.	June 1	28
Elroy Wright	Paint Dept.	July 1	28

HOUSTON OFFICE

Frank N. Highams	Controller's Dept.	June 1	36
Rudolph S. Johnson	Specialty Products Mftg. & Fuel Oil Terminal	July 5	25
Stephen G. Loy	Controller Humble Pipe Line	July 14	38
Samuel M. May	Refining Accounting	July 9	34
Max C. Mennike	Purchasing	July 13	31

Deaths

Employees: William E. Boyd, 61, civil engineer at Gladewater, on June 7; George G. Crevenstene, 62, garage helper at the Houston Garage, on May 27; Floyd J. Deroche, 24, roustabout at Grand Isle, on June 1; Melouise W. Drake, 31, statistical clerk in Exploration Geologic in the Houston Office, on June 30.

Virgil Golden, 56, pipe fitter first at Baytown Refinery, on June 19; Fred J. Granger, 55, rotary driller at Bayou Sale, on June 20; George B. Harlan, 47, pipe liner at Pierce Junction, on June 17; Herman Heep, 47, senior truck salesman at Seguin Bulk Station, on May 20; Elvin V. Hendrix, 52, helper at Baytown Refinery, on May 20.

Gerald L. Hewitt, 59, station operator, at Webster Station, on May 16; Marion O. Manley, 50, relief pumper at Baytown Refinery, on June 4; Robert B. McCartney, 55, operator second at Baytown Refinery, on May 20; Benjamin A. Raynor, 33, electrician at Grand Isle, on June 1; Robert M. Trimble, 43, senior division clerk at Southern Division Humble Pipe Line Co., on July 1; Andrew D. Waldrip, 50, relief pumper at Baytown Refinery, on May 30; Robert E. White, 26, roustabout at Grand Isle, on June 1.

Annuitants: Richard H. Barrett, 67, former farm boss at Beaumont, on June 18; Charles A. Ehrlund, 82, former sampler first class at Baytown Refinery, on June 14; Andrew Hebert, 81, former pipe machine helper at Baytown Refinery, on May 22; David C. Hicks, 69, former water pumper at Baytown Refinery, on May 27; Roy L. Jones, 50, former insulator first at Baytown Refinery, on June 26.

Clarence T. Maris, 65, former boilermaker second at Baytown Refinery, on May 23; William O. Mays, 75, former roustabout at Odessa, on May 18; Shadrack A. McClain, 74, former valve repairman at Baytown Refinery, on June 5; James F. McLane, 69, former lease pumper-gauger at Gladewater, on July 7; Clarence Phillips, 74, former locomotive crane operator at Baytown Refinery, on June 1.

Robert W. Richardson, 65, former foreman—Light Oil Treater—at Baytown Refinery, on June 29; James J. Spillers, 69, former compressor plant operator and gauger at Goose Creek, on May 15; Hortense G. Stafford, 64, former chief telephone operator at Baytown Refinery, on July 8; Acklin C. Thibodaux, 70, former boiler repairman helper at Baytown Refinery, on June 25; I. B. Wunsch, 60, former operator at Baytown Refinery, on June 25.

Humble Answers Antitrust Charge

On May 29, 1958, a federal grand jury in Alexandria, Virginia indicted Humble Oil & Refining Company and 28 other oil companies, alleging that the companies violated the Sherman Antitrust Act by conspiring to raise, fix, and stabilize prices of crude oil and automotive gasoline.

Morgan J. Davis, Humble's President, immediately issued a vigorous denial that the Company conspired with anyone to commit an unlawful act and stated that Humble's long practiced methods of crude oil and product pricing violated no laws. Mr. Davis also deplored ". . . that in addition to the physical and economic problems oil companies must face daily in serving the American public, they must also be compelled to defend themselves against unfounded, politically inspired criticism at every turn."

On June 9, Humble entered a plea of "Not guilty" to the charges.

In order to present additional information on the subject to the Company's shareholders, employees, customers, and other friends, Humble last month issued a pamphlet in which Executive Vice President C. E. Reistle, Jr., stressed the following basic facts:

1) The Alexandria grand jury heard only such evidence and arguments as the attorneys for the Justice Department chose to bring before it. An indictment is only a statement of charges—not a proof of guilt. The charges, insofar as Humble is concerned, are baseless and without foundation.

2) The indictment relates in part to Humble's action taken on January 3, 1957, increasing crude oil prices, and to its action shortly thereafter in increasing product prices. Humble's action on crude prices followed the closing of the Suez Canal and occurred for two reasons: First, Humble needed more oil than it could produce itself or buy at the level of prices then existing. In an effort to obtain additional supplies so as to fulfill commitments to its customers Humble increased its offering price for crude oil. Second, the increase was warranted because there had been no general increase in the price of crude oil since 1953; whereas since that date prices of goods and services, which are the major elements of cost in petroleum operations, increased substantially. The increase in product prices was necessary for the company to realize in its refinery operation the higher price of the crude oil used.

3) Current prices of crude oil and of petroleum products generally are relatively low. They are low considering the increases in cost of labor and materials used by the industry and in terms of earnings and purchasing power of consumers; they are low in that the rate of return on petroleum investments has been declining and is now less than in manufacturing industries generally. More importantly, they are low in that they have not encouraged enough exploration to maintain the ratio of crude reserves to domestic demand.

Humble Acquires Louisiana Furs Corporation

Humble Oil & Refining Company's acquisition of all the assets of Louisiana Furs Corporation of Chicago was announced July 3.

The trade involved the exchange of Humble stock for the holdings of Louisiana Furs.

Among the principal assets of Louisiana Furs is fee title to approximately 125,000 acres of land in Vermilion Parish, Louisiana. Oil or gas fields located on these properties include Pecan Island Field, Fresh-water Bayou Field, North Fresh-water Bayou Field, North Pecan Island Field, and portions of East White Lake Field, Live Oak Field, and S. W. Esther Field.

Various oil and gas producing companies are leaseholders and operators in these fields.

In separate transactions Humble has purchased more than 85 per cent of the royalties held by others on portions of the acreage acquired from Louisiana Furs.

Contract Signed With Architects

In answer to newspaper inquiries, Humble confirmed, on July 20, the fact that a contract had been signed with Welton Becket and Associates, architects and engineers, for preliminary planning and economic studies for the utilization of the two blocks of downtown Houston property purchased by the Company in August, 1957.

The Becket firm has offices in Los Angeles, Dallas, and several other principal cities. It is anticipated that the preliminary studies will require several months.

Huber Presented Plaque of Appreciation

C. E. Reistle, Jr. T. A. Huber

T. A. Huber, Assistant Chief Petroleum Engineer, was presented a plaque recently in recognition of his outstanding achievements in the field of reservoir engineering.

C. E. Reistle, Jr., Humble executive vice president, made the presentation at the annual Reservoir Engineering School banquet.

The certificate stated that "with prophetic vision, the recipient pioneered and actively promoted the application of reservoir engineering from its modest beginning to its present eminence and thereby contributed immeasurably to the economic growth of Humble. He has placed Humble in a position of leadership in the field of reservoir engineering and has set a pattern followed by industry for the application of reservoir engineering in production operations."

Mr. Huber served as Chief Reservoir Engineer from 1950 to 1953, at which time he was promoted to his present position of Assistant Chief Petroleum Engineer. He is a graduate of Ohio Northern University and the University of Pittsburgh.

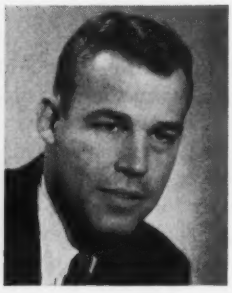
Several Organizational Changes Announced

R. H. Venn

F. A. Watts

R. M. Stephens

A. A. Draeger



S. K. Britt

Several important organizational changes have been announced in recent weeks, most of them resulting from the extensive organization studies which have been in progress throughout the Company for some time. The major changes are summarized below:

Marketing Department: This is a new department established June 1 and assigned responsibility for all of the activities of the former Sales Department and the marketing of all chemical and petroleum products formerly handled by the Refining Department.

R. H. Venn, formerly manager of the Refining Department, has been named manager of the new Marketing Department. F. A. Watts continues as sales manager in charge of retail sales and of wholesale sales in the marketing divisions. R. M. Stephens, formerly Assistant Sales Manager, is now assistant to the manager of the Marketing Department. A. A. Draeger, formerly head of the Refining Research and Development Division, has been named manager of General Office Sales of the Marketing Department.

The Sales Promotion and Advertising group, formerly in the Advertising and Public Relations Department, has been reassigned as a staff division of the Marketing Department and S. K. Britt has been named manager of the division.

Manufacturing Department: This is a new name for the Refining Department. Dr. C. F. Jones, formerly technical assistant to the manager of Refining, has been named manager of the Manufacturing Department. He takes the place vacated by R. H. Venn.

W. D. Seyfried has been named head of the Refining Research and Development Division, taking the place of A. A. Draeger, who has moved to the Marketing Department. Mr. Seyfried had previously been assistant head of the division.

C. F. Jones

W. D. Seyfried

Traffic Department: The name of the Traffic Bureau was changed to the Traffic Department on July 14, and Harold D. Ward was designated manager of the department. E. J. Best continues as assistant manager. Earl W. Gerloff, former Traffic Manager, is on special assignment in the department.

H. D. Ward

Mr. Ward formerly was manager of the Houston Office Division of the Employee Relations Department, and for the past few months has been head of the Employee Communications Division.

Lease Records and Rentals Section: This is a new section in the Exploration Department created July 1 out of the consolidation of the former Land Records and Rentals Division of the Law Department and the former Titles and Records Section of the Exploration Department.

A program has been initiated for decentralizing the functions of the combined group. Units will be established in each of the operating divisions of the Exploration Department for handling on a division basis a great part of the work previously done by the two groups in Houston.

E. Q. Smith, formerly Assistant Chief Titleman, is head of the Lease Records and Rentals Section.

General Services Department: This is a new department, established August 1, with responsibility for all of the activities of the former Office Buildings Department plus the following activities formerly in the Controller's Department: general services at the Houston Research Center; stationery, printing, and reproduction; surplus furniture, fixtures, and office machines; office building hall service; office equipment repair shop; and mail service.

J. M. Craddock

J. M. Craddock is manager of the General Services Department, and J. M. Crouch is assistant manager. They previously held similar positions in the Office Buildings Department.

Means Camp Site To Become Public Park

This shady spot in the old Means District Camp will soon become a public park site.

The site of Humble's old Means District camp, with its familiar grove of elm trees standing like an oasis on the West Texas plain 11 miles north of Andrews, is destined to become a public park.

In response to a proposal of the Andrews County Commissioners Court, Humble's Board of Directors has agreed to donate 27 acres of the campsite to the County for a public park. The County proposed to purchase from Humble a number of the camp's facilities, including a cottage, a mess hall, three bunk-houses, an assembly hall, generator building, and the camp's water, sewerage and electrical systems.

The Means Camp was established in 1934, and the Company began abandoning it in 1956. The district office was moved to a new building in Andrews last April, and the Means District was redesignated the Andrews District.

In donating the campsite surface rights to Andrews County, Humble retains the right to reclaim the land and repurchase the facilities should the county ever decide to abandon the park.

Toland and Phillips Win Roadeo Titles

W. L. Toland of Abilene Terminal and J. D. Phillips of Odessa Bulk Station won top honors in Humble's annual Truck Roadeo held June 23 in Abilene.

Toland, a three-time Western Division champion, and also a district champion in 1956, won the semi-trailer championship. Phillips, a Humble employee since 1956, won the state title in the bobtail division on his first attempt.

Runners-up were H. W. Berrier of Waco Products Terminal in the semi-trailer division, and Luther J. Newman of Corpus Christi Bulk Station in the bobtail class.

W. L. Toland **J. D. Phillips**

Sturtevant Succeeds Loy

John D. Sturtevant has been elected Controller and Director of Humble Pipe Line Company to succeed S. G. Loy, who retired July 14.

Mr. Sturtevant has been Assistant Controller since January 1, 1957. He graduated from Southern Methodist University in 1934 and worked for

Sturtevant

Loy

several oil industry firms before joining the Controller's staff of Humble Oil & Refining Company in 1946.

Mr. Loy was an employee of the Pipe Line Company for almost 39 years, had served as Controller since 1941, and had been a director for 10 years.

Morgan Davis Named To API Committee

Humble president Morgan J. Davis has been named a member of the new Committee on Public Affairs of the American Petroleum Institute.

It is anticipated that the new committee will be in a position to take over activities of the American Petroleum Industries Committee and the Oil Information Committee by September 1, at which time those two groups will be dissolved.

Avenell is Promoted

Norman B. Avenell has been named Marine Department Head, effective

N. B. Avenell

J. S. Burrows

August 1, in the place of J. S. Burrows, who retired on that date. Mr. Avenell formerly was assistant head of the department.

Way Wins Awards

THE HUMBLE WAY recently was presented two awards in the field of industrial publications.

At the annual conference of the International Council of Industrial Editors in Washington, D. C., THE HUMBLE WAY received an Award of Excellence "in recognition of exceptional accomplishments in achievement of purpose, excellence of editorial content, and effectiveness of design."

The magazine also won an Award of Merit at the Nineteenth Annual Exhibit of Southern Printing concluded recently at Louisville, Kentucky. There were three awards in the category of "House Organs and Publications." THE HUMBLE WAY won first place.

The Cover Artist

Lloyd Hawthorne, who painted the front cover and two other Intracoastal Canal scenes in this issue (pages 11 and 14), is a talented young (34) Pineville, Louisiana, artist making his first appearance in THE HUMBLE WAY. He is a Navy veteran of World War II, and holds degrees in art and psychology from Louisiana College. Only recently, he resigned his job as draftsman-artist for a utility company in Alexandria to devote full-time to painting and commercial art.

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Art Credits: Cover painting and paintings on page 11 and top of page 14 by Lloyd Hawthorne. Paintings on pages 12-13 and the bottom of page 14 by Al Kaeppel. All other art by Harris Goode & Associates.

Picture Credits: Inside front cover and page 23 by Mel Coston; page 6 (top) by Houston Chronicle; page 6 (bottom) by Lawless & Son; page 7 (bottom) by Ronald L. Morris; inside back cover and pages 5, 7 (top), 8, 9, 15-18 by Tom Nowlin.

Strings of 30-inch line are readied for spanning bay and Ship Channel near Humble's Baytown Refinery. Crossing is on recently completed addition to Company's Tomball Natural Gas System.